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in this State. It at least deserves to be called 'locally common,' or else considered as 'increasing in abundance.' The developments as regards this situation for the next few years will undoubtedly be of great interest.¹

NOTES ON THE BIRDS OF THE SUNKEN LANDS OF SOUTHEASTERN MISSOURI.

BY ARTHUR H. HOWELL.

THE field work of the Biological Survey for the season of 1909 included a collecting trip in the 'Sunken Lands' and swampy river bottoms of southeastern Missouri — a region famous for the vast numbers of waterfowl which stop there on their migratory flights, and interesting also as the summer home of several rare birds, notably Bachman's and Swainson's Warblers.

The characteristics of this region have been described in several articles by Mr. O. Widmann.² It is perhaps sufficient to note here that the lakes and swampy areas, which cover a large part of seven counties in Missouri and portions of Tennessee, Kentucky, and Arkansas, were formed by a subsidence of the land following a series of earthquakes in 1811-1812. Evidences of this subsidence are still seen in the presence in some of the lakes of dead stubs of old cypresses standing in deep water far from the present shore line. This swampy region forms a northward extension of the Lower Austral Zone, and for that reason a study of its

¹ Not only are Canvas-backs becoming more numerous, but Greater Scaups and Redheads have also noticeably increased lately. They are now seen and shot in some ponds on Cape Cod and in Plymouth County, which they never frequented before; and in some localities, where they formerly were met with only occasionally, they are now becoming quite common, so that their arrival during the fall migrations can be depended upon with a reasonable degree of certainty. This flight, or rather change in the migratory route, seems to include these three varieties of ducks. The question is whether this condition is only temporary or whether it is to be permanent.

² Auk, XII, 1895, pp. 350-355; XIV, 1897, pp. 305-309; 'Birds of Missouri.' Trans. Acad. Sci. of St. Louis, XVII, No. 1, 1907, pp. 14-16.

breeding birds is of special importance in order that the northern limits of such forms as occur in that Zone may be determined.

The localities visited in Missouri are as follows: St. Francis River, about 12 miles north of Cardwell, Dunklin County (April 25-30); Kennett (May 1, 2); Portageville (May 3, 4); Cushion Lake, 7 miles southeast of Portageville (May 4-7).

The following list includes only the rarer birds, and those whose subspecific identity has been a matter of conjecture.

Podilymbus podiceps. PIED-BILLED GREBE.—Three or four were seen in the wooded swamps along the St. Francis River and one on Cushion Lake.

Anhinga anhinga. SNAKEBIRD.—One was seen on Cushion Lake.

Anas platyrhynchos. MALLARD.—A few Mallards are reported to breed in the more inaccessible portions of Cushion Lake.

Aix sponsa. WOOD DUCK.—Wood Ducks are probably more numerous in this region than in any other part of the United States, and this in spite of the fact that many thousands are shot every fall and winter. At the time of my visit they were breeding and comparatively few were seen. I did, however, see from one to six each day that I was in the swamps. They are very wary and fly swiftly up and down the bayous, mainly in pairs, uttering their characteristic call notes. Several times a pair was flushed from the water in the timbered 'sloughs' where they were feeding.

Branta canadensis. CANADA GOOSE.—A few geese are said to breed in the vicinity of Cushion Lake, where a local hunter told me he had caught a few young geese every spring.

Botaurus lentiginosus. AMERICAN BITTERN.—Bitterns were very numerous in the St. Francis River marshes, April 25-30, and were frequently heard 'pumping.'

Ardea herodias. GREAT BLUE HERON.—A few were seen both on the St. Francis River and on Cushion Lake.

Rallus elegans. KING RAIL.—Two were seen and one collected May 3 in a wet ditch along a railroad at Portageville.

Fulica americana. COOT.—Several small companies of two to five were seen in the reedy portions of the St. Francis River.

Gallinago delicata. WILSON'S SNIFE.—Two were seen May 1 at Kennett and two May 3 at Portageville.

Buteo lineatus. RED-SHOULDERED HAWK.—One was collected April 29 in the timber near the St. Francis River, and on May 7 a nest was found in a small tree in a dense thicket near Cushion Lake. The young in this nest were about half grown. The male bird was collected.

Dryobates villosus auduboni. SOUTHERN HAIRY WOODPECKER.—Not very common, but a few were observed both on the St. Francis River and at Cushion Lake. At the latter place a breeding male was collected.

Dryobates pubescens medianus. NORTHERN DOWNY WOODPECKER.—Several pairs were seen on the St. Francis River and on April 28 a breeding female was collected.

Colaptes auratus. FLICKER.—Rather scarce in the swamps but a few were seen in the drier parts of the timber at Cushion Lake and St. Francis River. A specimen collected at Cushion Lake seems to furnish the first record of this southern form of the Flicker from Missouri.

Corvus brachyrhynchos. CROW.—Crows are quite scarce in this region; only three were seen at Portageville and none at all in the broad fields at Kennett.

Agelaius phoeniceus. RED-WINGED BLACKBIRD.—Redwings are very abundant in the marshes along the St. Francis River and at the time of my visit they were paired and beginning to build their nests. Specimens taken there belong to the typical race. They are not common at Cushion Lake.

Sturnella magna argutula. SOUTHERN MEADOWLARK.—Fairly common at Portageville where a specimen referable to this form was secured. They were scarce at Kennett, and along the St. Francis only one was seen, in a clearing two miles back from the river.

Lanius ludovicianus [migrans ?]. MIGRANT SHRIKE.—Scarce in this region; only one pair was seen near Kennett; one of these birds was carrying nesting material into an oak tree on the edge of a plowed field.

Protonotaria citrea. PROTHONOTARY WARBLER.—This is an abundant and characteristic inhabitant of the swampy bottom lands. They were present in numbers along the St. Francis River by April 25, and on May 7 at Portageville I saw one carrying nesting material into a fence post by the roadside.

Helinaia swainsoni. SWAINSON'S WARBLER.—Not common, but a few were heard singing in the swamps along the St. Francis and two specimens were collected. When singing they sit in a tree at a height of 10 or 15 feet — often over water. The song is loud and clear, consists usually of five notes, and resembles somewhat the song of the Louisiana Water-Thrush.

Vermivora bachmani. BACHMAN'S WARBLER.—Fairly common along the St. Francis River and about Cushion Lake. They were first noted April 28 and 29 at St. Francis River when three specimens were secured and another one heard, all in a brushy clearing in the drier part of the swamp some two miles from the river. The birds taken were males and were singing from low trees at a height of about 15 feet from the ground. The song is short and sounds like a faint, weak song of the Worm-eating Warbler, but has the 'burring' quality of the song of *Vermivora pinus*. At Cushion Lake they were common and many were seen singing in the cypresses over the water. They are also fond of thick woods grown up to cane (*Arundinaria*). A female taken May 5 was evidently incubating at the time.

Dendroica dominica albiflora. SYCAMORE WARBLER.—One was collected May 6 from a cypress on Cushion Lake — the only one noted.

Geothlypis trichas. NORTHERN YELLOW-THROAT.—Fairly common in the swamps and heavy timber. Specimens from Portageville and St. Francis River are referable to the northern form.

Telmatodytes palustris iliacus. PRAIRIE MARSH WREN.—Rather scarce in the marshes along St. Francis River and on Cushion Lake, but perhaps not all had arrived from the South. Two specimens were taken at the above localities.

A SERIES OF NESTS OF THE MAGNOLIA WARBLER.

BY CORDELIA J. STANWOOD.

THE warblers were late in 1907. The cold, backward spring was behind time in unfolding catkin and leaf whereon the insect hosts prey, and the warblers who live on the insect life keep pace with the resurrection and birth of moth and butterfly, mosquito and aphid, caterpillar and beetle. It was the 17th of May before I heard the *weechy, wee-chy, wee-chy*; or the *wee-o, wee-o, wee-chy*; or the *wee-chy, wee-chy, wee-chy-tee* of the Magnolia Warbler, and all of a week later before I saw one. After that they came in flocks, those gorgeous, floating flowers from their winter homes in Panama and Mexico.

The Magnolia is one of the most beautiful of the birds that comes to nest in the cool north. While migrating the bird is noticeably restless, even for a warbler, keeping well hidden within the evergreens where it feeds much of the time, although it makes frequent excursions to the larches, gray birches and other trees of the swamp and its surrounding woodlands.

On the 13th day of June, I took my luncheon for a day in the woods, not that I was going far, but the days are all too short when birds are migrating and nesting, and I was bent on hunting birds' nests. Towards noon my efforts were rewarded by finding the nest of a Magnolia Warbler nearly completed. Two days later, I came upon a second nest of the same bird, and six days later a third. On the 15th day of July, I just missed placing a fourth. By accident, I discovered the empty nest later.